

Appln No. 10/037,897

Amdt date July 7, 2005

Reply to Office action of April 7, 2005

REMARKS/ARGUMENTS

The above identified patent application has been amended and reconsideration is hereby requested. Claims 1-34 are currently in the application. Claims 7 and 15 have been amended. Claims 8, 9 and 16 have been cancelled. No claims have been added by this amendment.

The Examiner has rejected Claims 1, 4-8, 12-15, 19-22 and 26-30 under 35 U.S.C. §103 as being unpatentable over Applicant's admitted prior art, namely the background section of the specification ("background") in further view of the reference of Chang et al. ("Chang"). However, Claim 1 calls in part for,

"applying a control voltage to an input of the second voltage-controlled oscillator such that an output frequency of the second voltage-controlled oscillator locks to an output frequency of the first voltage-controlled oscillator; and varying the output frequency of the first voltage-controlled oscillator until the output frequency of the second voltage-controlled oscillator falls out of lock with the output frequency of the first voltage-controlled oscillator."

Fig. 1 of Chang shows only a single injection locked oscillator. And while these types of voltage controlled oscillators ("VCOs") may be known in the art, nothing in Chang discloses varying the output frequency of a first VCO to intentionally affect the performance of a second VCO. Indeed, Chang focuses on the conditions under which a single VCO will lock to a signal. Chang is silent as to the performance of a plurality of VCOs in proximity to one another.

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In contrast, the admitted prior art, specifically Applicant's background section, pages 2-3 of the specification, does envision a pair of VCOs, but only in so far as it describes the problems present in the prior art with known arrangements, such as the exemplary integrated transceiver described at line 23 of page 1. As described, this transceiver includes a transmitter and a receiver on the same substrate, wherein the VCO of the receiver locks to the frequency of a remote oscillator, while the VCO of the transmitter locks to the frequency of the local oscillator. (emphasis added). What the background section does not teach, among other limitations, is "varying the output frequency of the first voltage-controlled oscillator until the output frequency of the second voltage-controlled oscillator falls out of lock with the output frequency of the first voltage-controlled oscillator", as currently called for in Claim 1.

Even if one were to replace one or both VCO of the prior art transceiver with an the VCO of Chang, this would still not teach "varying the output frequency of the first voltage-controlled oscillator until the output frequency of the second voltage-controlled oscillator falls out of lock", as called for by the claim. In contrast, what would be produced would be a transceiver with two independently locking VCOs having the features described in Chang. These VCOs may still experience the crosstalk common with two oscillators running at slightly different frequencies. Therefore, because the cited prior art does not disclose, "varying the output frequency of the first voltage-controlled oscillator until the output frequency of the

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second voltage-controlled oscillator falls out of lock" among other limitations as called for by Claim 1, Applicant submits that Claim 1 is neither taught, described, nor suggested in the background even in view of Chang. Claims 2-6 are dependent on Claim 1. As such, Claims 2-6 are believed allowable based upon Claim 1 and for the additional limitations contained therein.

Applicant has amended Claim 7 to call for,

"applying a control voltage to an input of the voltage-controlled oscillator such that the output frequency of the voltage-controlled oscillator locks to an output frequency of another voltage-controlled oscillator on the integrated circuit; and varying the output frequency of the voltage-controlled oscillator until the output frequency of the voltage-controlled oscillator falls out of lock with the other voltage-controlled oscillator" (emphasis added).

Applicant submits for reasons similar to those stated above, namely that neither the admitted prior art nor Chang disclose a pair a VCOs directly interacting with one another. Therefore, because the cited prior art does not disclose, "the output frequency of the voltage-controlled oscillator locks to an output frequency of another voltage-controlled oscillator" among other limitations as called for by Claim 7, Applicant submits that Claim 7 is neither taught, described, nor suggested in the background even in view of Chang. Claims 10-14 are dependent on Claim 7. As such, Claims 10-14 are believed allowable based upon Claim 7 and for the additional limitations contained therein.

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Applicant has amended Claim 15 to call for,

"applying a control voltage to an input of the second voltage-controlled oscillator such that an output frequency of the second voltage-controlled oscillator locks to an output frequency of the first voltage-controlled oscillator; and varying the output frequency of the first voltage-controlled oscillator until the output frequency of the second voltage-controlled oscillator falls out of lock with the output frequency of the first voltage-controlled oscillator." (emphasis added).

Applicant submits for reasons similar to those stated above, namely that neither the admitted prior art nor Chang disclose a pair a VCOs directly interacting with one another. Therefore, because the cited prior art does not disclose, "an output frequency of the second voltage-controlled oscillator locks to an output frequency of the first voltage-controlled oscillator" among other limitations, as called for by Claim 15, Applicant submits that Claim 15 is neither taught, described, nor suggested in the background even in view of Chang. Claims 17-25 are dependent on Claim 15. As such, Claims 17-25 are believed allowable based upon Claim 15 and for the additional limitations contained therein.

Claim 26 calls for,

"determining a crosstalk power between the first and the second VCOs using the measured injection lock frequency range and the measured signal power of the second VCO; and adjusting a signal power ratio between the first VCO and the second VCO to reduce intermodulation."

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Applicant submits for reasons similar to those stated above, namely that neither the admitted prior art nor Chang disclose a pair a VCOs directly interacting with one another. Therefore, because the cited prior art does not disclose, "adjusting a signal power ratio between the first VCO and the second VCO to reduce intermodulation" among other limitations, as called for by Claim 26, Applicant submits that Claim 26 is neither taught, described, nor suggested in the background even in view of Chang. Claims 27-29 are dependent on Claim 26. As such, Claims 27-29 are believed allowable based upon Claim 26 and for the additional limitations contained therein.

Claim 30 calls for, "wherein, the first VCO is configured to have a different power level relative to that of the second VCO to reduce the intermodulation." Applicant submits for reasons similar to those stated above, namely that neither the admitted prior art nor Chang disclose a pair a VCOs directly interacting with one another. Therefore, because the cited prior art does not disclose that, "the first VCO is configured to have a different power level relative to that of the second VCO to reduce the intermodulation" among other limitations, as called for by Claim 30, Applicant submits that Claim 30 is neither taught, described, nor suggested in the background even in view of Chang. Claims 31-34 are dependent on Claim 30. As such, Claims 31-34 are believed allowable based upon Claim 30 and for the additional limitations contained therein.

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In view of the above, it is submitted that the claims are patentably distinct over the cited references, and that all the rejections to the claims have been overcome. Accordingly, Applicant respectfully requests a timely indication of allowance. Should there be any further issues that can be addressed by telephone, Applicant invites the Examiner to contact the undersigned at the number indicated below.

Respectfully submitted,  
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